

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (canceled)
2. (currently amended) A diagnostic system having a biochip readout apparatus, comprising:

a biochip readout device including:

a biochip cartridge comprising: (i) an optical disc comprising a first and a second substrate and a selective wavelength reflection film disposed on the first substrate, mounted on the optical disc, forming a first or a second uppermost later of the biochip cartridge, and the first substrate having one or more substantially circular lands and grooves formed thereon, the second substrate having one or more depressed portions formed therein; and (ii) at least one or more preformed biochips each comprising bio-cells spotted on the second substrate and forming an array having a substantially square or rectangular shape; and at least one or more fixing members, wherein: the at least one or more biochips are removably installed in each of the depressed portions with the one or more members thereunder such that the at least one or more biochips cannot be separated from the optical disc when the optical disc is rotated or moved or the biochip is combined with another substrate thereon; and the optical disc is coated with a selective wavelength reflection film is

disposed between the one or more biochips and the first substrate ~~a and; the reflection film is located between the one or more depressed portions and the optical disk;~~

a disc rotation drive unit driven such that the biochip cartridge is rotated;

a system and output controlling unit for outputting monitoring bio analysis information, the system and output controlling unit having a signal processing unit for processing and analyzing the bio analysis signal corresponding to bio analysis information to generate the monitoring analysis information;

an optical pick-up device comprising:

a light receiving unit comprising one or more light sources and one or more light detectors; wherein: light from the one or more light sources is reflected by the reflective coating of the selective wavelength reflection film of the biochip cartridge and is detected by the one or more light detectors to obtain tracking and focusing signals for the optical pick-up device; and light from the one or more light sources causes the one or more biochips to emit a fluorescent signal that is detected by the one or more light detectors;

a focusing/tracking controlling unit for controlling a focusing and tracking operation of the optical pick-up device using the tracking

and focusing signals beam received by from the first light reception means detector, so that the light from the one or more light sources tracks along the one or more lands and grooves of the biochip cartridge;

an optical pick up unit having an objective lens drive driving unit for focusing the light from the one or more light sources tracking a focus and track of the light source;

an optical pick up device having a bio analysis signal generation unit for receiving [[a]] the fluorescent signal emitted light excited by the one or more biochips biochip and outputting a bio analysis signal; and

an optical recording/reproducing unit for recording a recording bio analysis signal in a predetermined area of the biochip cartridge in response to a control signal of the system and output controlling unit and reproducing recorded biochip analysis information;

a mode selection unit for selecting one of a biochip readout mode and a general optical recording/reproducing mode; and

a diagnosis device for comparing the monitoring bio information for monitoring image signal from the biochip readout device with reference data and proving an analysis result generated based on a result of the comparing operation to a

user, wherein the reference data for monitoring bio-information of the biochip are constructed in database format in the diagnosis device.

3. (canceled)

4. (previously presented) The biochip readout device as set forth in claim 2, wherein the bio analysis signal generation unit of the optical pick-up device scans the biochip cartridge with light in response to a control signal inputted from the system and output controlling unit, in case that the optical pick-up device has a single light source, and, at the same time, outputs a focusing/tracking controlling signal and the bio analysis signal caused by the light excited by the biochip.

5. (canceled)

6. (previously presented) The biochip readout device as set forth in claim 4, wherein the system and output controlling unit forms a matrix structure such that a cell revealing florescent dye is recognized as a letter of A and other cells are recognized as a letter of .~A, and generates monitoring bio analysis information based on the matrix structure.

7. (previously presented) The biochip readout device as set forth in claim 6, wherein the bio analysis signal generation unit comprises:

an excited florescence filter for filtering an excited florescence wave of lights excited by the biochip; and

an excited florescent wave head for outputting the bio analysis signal based on detection of the filtered excited florescence wave in response to the control signal inputted from the system and output controlling unit.

8-11. (canceled)

12. (previously presented) The apparatus as set forth in claim 7, wherein the bio-cell spotted on the optical disc is formed by a bio cell patterning device, the patterning device including:

a servo device for rotating the optical disc at a predetermined speed;

a printer including a pin module for patterning bio-cell in a bio-cell patterning area on the upper surface of the biochip cartridge in response to a control signal inputted from the outside; and

a controlling unit for controlling the entire system such that the servo device can be driven to rotate the optical disc under user control and bio cell pattern can be printed on the optical disc through the pin module.

13. (previously presented) The apparatus as set forth in claim 12, wherein the pin module of the bio cell patterning device is formed as a structure such that bio cell is formed

on the entire optical disc for one rotation of the optical disc or as a structure such that bio cell is formed on the entire optical disc for a half rotation of the optical disc.

14. (previously presented) The apparatus as set forth in claim 13, wherein the controlling unit controls the servo device to rotate the optical disc at a constant angular velocity such that bio-cells are formed by the printer as the bio-cells are aligned widely from the inner circle towards the outer circle or the servo device to rotate the optical disc with a constant linear velocity such that bio-cells are formed by the printer with the same interval along the inner/outer circle.

15. (previously presented) The biochip readout system as set forth in claim 14, further comprising a communication device for transmitting an analysis processing request data together with the monitoring image signal thereto after inputting the monitoring image signal to analyze bio-matter from the biochip readout device and connecting communication lines thereto based on predetermined communication connection information.

16-25. (canceled)